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| 10/565,577 | 07/14/2006 | Markus Frank | 5003073.069US1 | 2108 |
| 29737 7590 10/05/2009 SMITH MOORE LEATHERWOOD LLP P.O. BOX 21927 GREENSBORO, NC 27420 | | | EXAMINER CHOI, LING SIU | |
| | | | ART UNIT 1796 | PAPER NUMBER |
| | | | NOTIFICATION DATE 10/05/2009 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/565,577

Applicant(s)

FRANK, MARKUS

Examiner

Ling-Siu Choi

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/26/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. This Office Action is in response to the Preliminary Amendment filed 01/23/2006. Claims 19-20 have been added and claims 1-20 are now pending, wherein claims 1-8 are drawn to a process to produce an agglomerated superabsorbent polymer particle; claims 9-14 are drawn to an agglomerated superabsorbent polymer particle; claims 15 and 17 are drawn to a composite comprising the agglomerated superabsorbent polymer particle and substrate; claims 16 and 19 are drawn to a process to produce the composite; and claims 18 and 20 are drawn to the use of the composite.

Claim Objections

2. Claims 9 and 17 are objected to because of the following informalities: (A) Claim 9, line 2, "obtainable" is suggested to be changed to --obtained-- and (B) Claim 17, line 1, "--obtainable" is suggested to be changed to --obtained--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 18 or 20 provides for the use of the agglomerated superabsorbent polymer particles, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 18 or 20 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Analysis

5. Summary of Claim 1:

| | |
|---|---|
| A process for producing an agglomerated superabsorbent polymer particle , comprising as steps: | |
| A | bringing (i) <u>superabsorbent polymer fine particles</u> having <u>at least about 40 wt%</u> a particle size of less than about 150 μ m into contact with (ii) a fluid comprising to more than about 10 wt.%, based on the total weight of |

| | |
|---|---|
| | the fluid, <u>a cross-linkable, uncrosslinked polymer</u> , which polymer is based on <u>polymerized, ethylenically unsaturated, acid groups-bearing monomers</u> or salts thereof to at least about 20 wt.%, based on the total weight of the cross-linkable, uncrosslinked polymer; and |
| B | cross-linking the uncrosslinked polymer by heating the superabsorbent polymer fine particles brought into contact with the fluid to a temperature within a range from about 20 to about 300 °C, so that the <u>cross-linkable, uncrosslinked polymer at least partially crosslinks</u> , wherein (a) the cross-linkable, uncrosslinked polymer comprises, besides the polymerized, ethylenically unsaturated, acid groups-bearing monomers, further polymerized, ethylenically unsaturated monomers (M) capable of reacting with polymerized acid group-bearing monomers in a condensation reaction, in an addition reaction or in a ring opening reaction, and/or (b) the fluid comprises, beside the cross-linkable, uncrosslinked polymer, <u>a crosslinker</u> . |

Summary of claim 10:

| | |
|--|---|
| An agglomerated superabsorbent polymer particle comprising <u>more than about 75 wt.% superabsorbent polymer fine particles</u> , wherein | |
| A1 | the <u>superabsorbent polymer fine particles</u> comprise, <u>at least about 40 wt.%</u> based on the total weight of the superabsorbent polymer fine particles, a particle size of less than about 150 µm and about at least partially onto a matrix of a crosslinked polymer, |
| A2 | wherein the crosslinked polymer comprises at least about 20 wt.%, based on the total weight of the crosslinked polymer, polymerized acid group-bearing monomers or salts thereof |
| A3 | the crosslinked polymer comprises |

| | |
|----|--|
| | a different chemical composition than the superabsorbent polymer fine particles or a different physical property than the superabsorbent polymer fine particles, and |
| A4 | wherein less than about 50 wt.% of the superabsorbent polymer particle comprises a particle size of less than about 150 μm . |

Summary of claim 11:

| | |
|--|---|
| An agglomerated superabsorbent polymer particle comprising superabsorbent polymer fine particles having, <u>at least about 50 wt.%</u> based on the total weight of the superabsorbent polymer fine particles, an average particle size of less than about 150 μm and abutting a matrix of a crosslinked polymer, wherein: | |
| B1 | the crosslinked polymer comprises at least about 20 wt.%, based on the total weight of the crosslinked polymer, on ethylenic acid group-bearing monomers or salts thereof, |
| B2 | the crosslinked polymer comprises a different chemical composition than the superabsorbent polymer fine particles or a different physical property than the superabsorbent polymer fine particles and wherein |
| B3 | the matrix comprises, besides the crosslinked polymer, an effect material comprising a <u>polysaccharide or a polyalkylether polyol or a silicon-oxygen-comprising compound or a mixture of at least two thereof.</u> |

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Azad et al. (US 2005/0013992 A1).

Azad et al. disclose a superabsorbent particles having a shell which comprises a cationic polymer crosslinked by the addition of a crosslinker and adhered to a hydrogel-forming polymer having a residual water content of less than 10 wt %, the particles being prepared by applying a coating solution, containing the cationic polymer and the crosslinker, to the hydrogel-forming polymer, wherein the hydrogel-forming polymer is neutralized at least 50 mole % and the cationic polymer comprises a polyamine or a polyimine material and wherein the superabsorbent particles has 80% of the particles smaller than 200 μm (claims 29 and 49). Azad et al. further disclose that “Other suitable polymers for grafting with N-vinylformamide are vinylacetate, acrylic acid, methacrylic acid, acrylamide and acrylonitrile. Other suitable polymers for grafting with N-vinylformamide are mono-, oligo- or polysaccharide-based polymers, which contains N-vinylformamide in contents from 20 to 95% by weight, related to the entire amount monomer+polymer. Said grafted polymers are rendered afterwards in free amines by

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hydrolyzation, rendered in case to un-neutralized form followed by crosslinking" ([0153]-[0154]). Thus, the present claims are anticipated.

8. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Woodrum et al. (US 5,350,799).

Woodrum et al. disclose a fine particulate superabsorbent particles being processed into larger particles by a process comprising (a) adding fine superabsorbent polymer particles having a particle size about 75 micron or less to a superabsorbent polymer solution polymerization reaction product gel and forming a dispersion of the particles in the gel;(b) adding water to the dispersion of the gel and the particles;(c) mixing the water and the dispersion to form a substantially uniform mixture of the particles in the reaction gel; and (d) drying the mixture, wherein the **crosslinker** is alkylene glycol diglycidyl ether (claims 1 and 7). Thus, the present claims are anticipated.

9. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Klimmek et al. (US 5,610,220).

Klimmek et al. disclose a powdery polymer composition which is capable of absorbing aqueous or serous liquids and blood comprising **(A)** a cross-linked polymer formed of (a) 55-99.9%-wt. **polymerized unsaturated, polymerizable acid-groups-comprising monomers which are neutralized to the extent of at least 25 mol-%**, (b) 0-40%-wt. polymerized unsaturated monomers which are copolymerizable with (a), and (c) 0.1-5.0%-wt. of a cross-linking agent, and **(B)** (d) 0-30%-wt. of a **water-soluble**

polymer, the weight amounts of (a) to (d) being based on the cross-linked polymer, wherein 100 parts of particles of the polymer composition is mixed with at least 0.1 and not more than 10 parts by weight of an at least 10% by weight aqueous solution of phosphoric acid, and (e) 0.05-0.3 parts by weight, based on the polymer composition, of a compound capable of reacting with at least two carboxyl groups and not comprising an alkali-salt-forming group in the molecule, and/or (f) 0.05-1 parts by weight, based on the polymer composition, of a compound capable of reacting with at least two carboxyl groups and comprising an alkali-salt-forming group in the molecule, and heated to 150-250°C, wherein the particle size is between 50-850 μm and the water-soluble polymer includes polyacrylic acid, polyvinyl alcohol, polyvinyl pyrrolidone, starch, or polyglycol (col. 5, lines 15-27 and 28-39; claim 1). Thus, the present claims are anticipated.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Ling-Siu Choi/

Primary Examiner, Art Unit 1796

September 27, 2009